REMARKS

The present Amendment amends claims 1, 7 and 10, leaves claims 2, 5, 6 and 9 unchanged, cancels claim 11, and adds new claim 12. Therefore, the present application has pending claims 1, 2, 5-7, 9, 10 and 12.

Support for Amendments

The support for the amendments to the claims may be found, for example, in Figs. 5, 6a and 6b, and the accompanying text in paragraphs [0045] to [0058] of U.S. Patent Application Publication No. 2004/0103113 of the present application.

35 U.S.C. §103 Rejections

Claims 1, 2, 5-7 and 9-10 stand rejected under 35 U.S.C. §103(a) as being unpatentable over U. S. Patent Publication No. 2003/0076781 to Enomoto et al. ("Enomoto") in view of *Efficient Data Allocation over Multiple Channels as Broadcast Servers* to Yee et al. ("Yee"). This rejection is traversed for the following reasons. Applicants submit that the features of the present invention, as now more clearly recited in claims 1, 2, 5-7, 9, and 10, are not taught or suggested by Enomoto or Yee, whether taken individually or in combination with each other in the manner suggested by the Examiner. Therefore, Applicants respectfully request the Examiner to reconsider and withdraw this rejection.

Amendments were made to the claims to more clearly describe features of the present invention. Specifically, amendments were made to the claims to more clearly recite that the present invention is directed to an information transmission system and method as recited, for example, in independent claims 1, 7 and 10.

The present invention, as recited in claim 1, and as similarly recited in claims 7 and 10, provides an information transmission system. The information transmission system includes: a timer; a first transmission line; a second transmission line; and a plurality of transmission terminals that are connected to both the first transmission line and the second transmission line.

According to the present invention, each of said transmission terminal includes: a relaying means; a device controller comprising a device control block; and a communication controller comprising a storage area, where the storage area comprises a status table.

Also according to the present invention, the status table includes: a first counter that indicates that data has been received; a second counter that indicates that no data has been received; a repetition required flag that indicates that there is no data reception during a preset time period and that data repetition is required; and a third counter that indicates that data repetition is required, where the third counter is assigned a value when the repetition required flag is set to indicate that data repetition is required.

Further, according to the present invention, each of said transmission terminals receives information from a sender via one or both of the first transmission line and the second transmission line, where each of the transmission terminals determines whether a failure has occurred on either the first transmission line or the second transmission line by checking whether the information is being transferred on the first transmission line and is not being transferred on the second transmission line, and where a determination that the information is being transferred on the first transmission line and is not being transferred on the second transmission line indicates a failure has

occurred on the second transmission line.

Furthermore, according to the present invention, when no failure occurs on the first transmission line and no failure occurs on the second transmission line, the relaying means of the transmission terminals do not relay the information to the first transmission line or the second transmission line, and each of the transmission terminals receives the information from the sender via both the first transmission line and the second transmission line.

Further, according to the present invention, when a failure occurs on the first transmission line, such that a first transmission terminal determines that the information is being transferred on the first transmission line and is not being transferred on the second transmission line, the first transmission terminal receives the information from the sender via the first transmission line, and a first relaying means of the first transmission terminal transfers the received information to the second transmission line such that the information is present on both the first transmission line and the second transmission line at the first terminal.

Even further, according to the present invention, the timer starts at the start of reception of the information by each of said transmission terminals, and the first transmission terminal: (a) increments the first counter when the first transmission terminal receives the information from the first transmission line; (b) determines whether the information is being transmitted from the second transmission line when no information is received by the first transmission terminal; (c) checks the repetition required flag and the third counter to determine whether data repetition is required when the information is being transmitted from the second transmission line; (d) relays the

information to the first transmission line and sends the information to the device control block when the repetition required flag and the third counter indicate that data repetition is required; (e) discards the information when data repetition is not required; and (f) determines whether the timer has reached a preset time.

Yet even further, according to the present invention, when the first transmission terminal determines that the timer has not reached the preset time, the first transmission terminal repeats (a)-(f), and when the first transmission terminal determines that the timer has reached the preset time, the first transmission terminal: increments the second counter and resets the first counter; sets the repetition required flag to indicate that there is no data reception during the preset time period and that data repetition is required; decrements the third counter; and resets the timer. The prior art does not teach or suggest all of the above-described features.

The above-described features of the present invention, as now more clearly recited in the claims, are not taught or suggested by any of the references of record. Specifically, the features are not taught or suggested by either Enomoto or Yee, whether taken individually or in combination with each other.

Enomoto teaches a system for controlling congestion on a network. However, there is no teaching or suggestion in Enomoto of the information transmission system and method as recited in claims 1, 7 and 9 of the present invention.

In the Enomoto congestion control system for congestion controlling communications on a network, a congestion control node has a congestion

detection part for detecting a congestion level of the communications in the congestion control node in question and a congestion notifying part for notifying other congestion control nodes on the network of congestion information detected by the congestion detection part. The congestion control node further has a part for receiving the congestion information from the other congestion control nodes and a congestion flow estimating part for estimating, with reference to the congestion information and a routing table for designating a transfer path to destination. The Enomoto system is implemented in a ring-shaped network.

One feature of the present invention, as recited in claim 1, and as similarly recited in claims 7 and 10, includes where the status table includes: a first counter that indicates that data has been received; a second counter that indicates that no data has been received; a repetition required flag that indicates that there is no data reception during a preset time period and that data repetition is required; and a third counter that indicates that data repetition is required, where the third counter is assigned a value when the repetition required flag is set to indicate that data repetition is required. Enomoto does not disclose this feature.

The Examiner appears to rely upon the combination of Enomoto and U.S. Patent No. 4,301,539 to Kage to support the assertion that the prior art teaches a status table. With regard to Enomoto, the Examiner asserts that the routing table shown in Fig. 11 is a status table (see rejection of claim 11, now canceled). However, the routing table of Enomoto is not the same as the status table of the present invention, as now more clearly recited in the claims.

As described in the Abstract, the routing table of Enomoto is merely a table that designates a transfer path to a destination. This is not the same as the status table of the present invention, which includes a first counter, a second counter, a third counter, and a repetition required flag. Therefore, the present invention is quite different from Enomoto, and as discussed in more detail below, Kage does not teach or suggest a status table, as now more clearly recited in the claims.

Another feature of the present invention, as recited in claim 1, and as similarly recited in claims 7 and 10, includes where the timer starts at the start of reception of the information by each of said transmission terminals, and the first transmission terminal: (a) increments the first counter when the first transmission terminal receives the information from the first transmission line; (b) determines whether the information is being transmitted from the second transmission line when no information is received by the first transmission terminal; (c) checks the repetition required flag and the third counter to determine whether data repetition is required when the information is being transmitted from the second transmission line; (d) relays the information to the first transmission line and sends the information to the device control block when the repetition required flag and the third counter indicate that data repetition is required; (e) discards the information when data repetition is not required; and (f) determines whether the timer has reached a preset time, where when the first transmission terminal determines that the timer has not reached the preset time, the first transmission terminal repeats (a)-(f). Enomoto does not disclose this feature.

For example, Enomoto does not disclose where the first transmission terminal checks the repetition required flag and the third counter to determine whether data repetition is required when the information is being transmitted from the second transmission line. Accordingly, the present invention is different from Enomoto.

By way of further example, Enomoto does not disclose a timer, and where the first transmission terminal determines whether the timer has reached a preset time, where when the first transmission terminal determines that the timer has not reached the preset time, the first transmission terminal repeats (a)-(f). Accordingly, the present invention is different from Enomoto.

Yet another feature of the present invention, as recited in claim 1, and as similarly recited in claims 7 and 10, includes where when the first transmission terminal determines that the timer has not reached the preset time, the first transmission terminal repeats (a)-(f), and when the first transmission terminal determines that the timer has reached the preset time, the first transmission terminal: increments the second counter and resets the first counter; sets the repetition required flag to indicate that there is no data reception during the preset time period and that data repetition is required; decrements the third counter; and resets the timer. Enomoto does not disclose this feature.

As previously discussed, Enomoto does not disclose a timer. It follows that Enomoto does not disclose where the first transmission terminal determines whether a timer has reached a preset time, and executes a series of steps upon the determination of whether the timer has reached the preset time. Accordingly, the present invention distinguishes over Enomoto.

Therefore, Enomoto fails to teach or suggest "wherein the status table comprises: a first counter that indicates that data has been received; a second counter that indicates that no data has been received; a repetition required flag that indicates that there is no data reception during a preset time period and that data repetition is required; and a third counter that indicates that data repetition is required, where the third counter is assigned a value when the repetition required flag is set to indicate that data repetition is required" as recited in claim 1, and as similarly recited in claims 7 and 10.

Furthermore, Enomoto fails to teach or suggest "wherein the timer starts at the start of reception of the information by each of said transmission terminals" and "wherein the first transmission terminal: (a) increments the first counter when the first transmission terminal receives the information from the first transmission line; (b) determines whether the information is being transmitted from the second transmission line when no information is received by the first transmission terminal; (c) checks the repetition required flag and the third counter to determine whether data repetition is required when the information is being transmitted from the second transmission line; (d) relays the information to the first transmission line and sends the information to the device control block when the repetition required flag and the third counter indicate that data repetition is required; (e) discards the information when data repetition is not required; and (f) determines whether the timer has reached a preset time" as recited in claim 1, and as similarly recited in claims 7 and 10.

Further, Enomoto fails to teach or suggest "wherein when the first transmission terminal determines that the timer has not reached the preset time, the first transmission terminal repeats (a)-(f), and wherein when the first

transmission terminal determines that the timer has reached the preset time, the first transmission terminal: increments the second counter and resets the first counter; sets the repetition required flag to indicate that there is no data reception during the preset time period and that data repetition is required; decrements the third counter; and resets the timer" as recited in claim 1, and as similarly recited in claims 7 and 10.

The above noted deficiencies of Enomoto are not supplied by any of the other references of record, namely Yee, whether taken individually or in combination with each other. Therefore, combining the teachings of Enomoto and Yee in the manner suggested by the Examiner still fails to teach or suggest the features of the present invention as now more clearly recited in the claims.

Yee teaches a method of efficiently allocating data over multiple channels at broadcast servers. However, there is no teaching or suggestion in Yee of the information transmission system and method as recited in claims 1, 7 and 9 of the present invention.

Yee discloses the use of broadcast transmission for disseminating data. As described in Yee, broadcast is used because broadcasting an item satisfies all outstanding client requests for the item. However, because the transmission medium is shared, individual requests may have high response times. Yee shows how to minimize the average response time given multiple broadcast channels by optimally partitioning data among the channels.

One feature of the present invention, as recited in claim 1, and as similarly recited in claims 7 and 10, includes where the status table includes: a first counter that indicates that data has been received; a second counter that

indicates that no data has been received; a repetition required flag that indicates that there is no data reception during a preset time period and that data repetition is required; and a third counter that indicates that data repetition is required, where the third counter is assigned a value when the repetition required flag is set to indicate that data repetition is required. Yee does not disclose this feature, and the Examiner does not rely upon Yee for teaching a status table.

Another feature of the present invention, as recited in claim 1, and as similarly recited in claims 7 and 10, includes where the timer starts at the start of reception of the information by each of said transmission terminals, and the first transmission terminal: (a) increments the first counter when the first transmission terminal receives the information from the first transmission line; (b) determines whether the information is being transmitted from the second transmission line when no information is received by the first transmission terminal; (c) checks the repetition required flag and the third counter to determine whether data repetition is required when the information is being transmitted from the second transmission line; (d) relays the information to the first transmission line and sends the information to the device control block when the repetition required flag and the third counter indicate that data repetition is required; (e) discards the information when data repetition is not required; and (f) determines whether the timer has reached a preset time, where when the first transmission terminal determines that the timer has not reached the preset time, the first transmission terminal repeats (a)-(f). Yee does not disclose this feature.

For example, Yee does not disclose where the first transmission terminal checks the repetition required flag and the third counter to determine whether data repetition is required when the information is being transmitted from the second transmission line. Accordingly, the present invention is different from Yee.

By way of further example, Yee does not disclose a timer, and where the first transmission terminal determines whether the timer has reached a preset time, where when the first transmission terminal determines that the timer has not reached the preset time, the first transmission terminal repeats (a)-(f). Accordingly, the present invention is different from Yee.

Yet another feature of the present invention, as recited in claim 1, and as similarly recited in claims 7 and 10, includes where when the first transmission terminal determines that the timer has not reached the preset time, the first transmission terminal repeats (a)-(f), and when the first transmission terminal determines that the timer has reached the preset time, the first transmission terminal: increments the second counter and resets the first counter; sets the repetition required flag to indicate that there is no data reception during the preset time period and that data repetition is required; decrements the third counter; and resets the timer. Yee does not disclose this feature.

As previously discussed, Yee does not disclose a timer. It follows that Yee does not disclose where the first transmission terminal determines whether a timer has reached a preset time, and executes a series of steps upon the determination of whether the timer has reached the preset time. Accordingly, the present invention distinguishes over Yee.

Therefore, Yee fails to teach or suggest "wherein the status table comprises: a first counter that indicates that data has been received; a second counter that indicates that no data has been received; a repetition required flag that indicates that there is no data reception during a preset time period and that data repetition is required; and a third counter that indicates that data repetition is required, where the third counter is assigned a value when the repetition required flag is set to indicate that data repetition is required" as recited in claim 1, and as similarly recited in claims 7 and 10.

Furthermore, Yee fails to teach or suggest "wherein the timer starts at the start of reception of the information by each of said transmission terminals" and "wherein the first transmission terminal: (a) increments the first counter when the first transmission terminal receives the information from the first transmission line; (b) determines whether the information is being transmitted from the second transmission line when no information is received by the first transmission terminal; (c) checks the repetition required flag and the third counter to determine whether data repetition is required when the information is being transmitted from the second transmission line; (d) relays the information to the first transmission line and sends the information to the device control block when the repetition required flag and the third counter indicate that data repetition is required; (e) discards the information when data repetition is not required; and (f) determines whether the timer has reached a preset time" as recited in claim 1, and as similarly recited in claims 7 and 10.

Further, Yee fails to teach or suggest "wherein when the first transmission terminal determines that the timer has not reached the preset time, the first transmission terminal repeats (a)-(f), and wherein when the first

transmission terminal determines that the timer has reached the preset time, the first transmission terminal: increments the second counter and resets the first counter; sets the repetition required flag to indicate that there is no data reception during the preset time period and that data repetition is required; decrements the third counter; and resets the timer" as recited in claim 1, and as similarly recited in claims 7 and 10.

Both Enomoto and Yee suffer from the same deficiencies, relative to the features of the present invention, as recited in the claims. Therefore, combining the teachings of Enomoto and Yee in the manner suggested by the Examiner does not render obvious the features of the present invention as now more clearly recited in the claims. Accordingly, reconsideration and withdrawal of the 35 U.S.C. §103(a) rejection of claims 1, 2, 5-7, 9, and 10 as being unpatentable over Enomoto in view of Yee are respectfully requested.

The remaining references of record have been studied. Applicants submit that they do not supply any of the deficiencies noted above with respect to the references used in the rejection of claims 1, 2, 5-7, 9 and 10.

For example, Applicants have studied U.S. Patent No. 4,301,539 to Kage, which does not supply any of the deficiencies noted above with respect to Enomoto and Yee.

One feature of the present invention, as recited in claim 1, and as similarly recited in claims 7 and 10, includes where the status table includes: a first counter that indicates that data has been received; a second counter that indicates that no data has been received; a repetition required flag that

indicates that there is no data reception during a preset time period and that data repetition is required; and a third counter that indicates that data repetition is required, where the third counter is assigned a value when the repetition required flag is set to indicate that data repetition is required. Kage does not disclose this feature.

The Examiner appears to rely upon the combination of Enomoto and Kage to support the assertion that the prior art teaches a status table. As previously discussed, Enomoto's routing table (e.g., Fig. 11) is not the same as the status table of the present invention, as now more clearly recited in the claims. Applicants further submit that Kage fails to teach or suggest a status table, in the manner claimed.

The Examiner asserts that Kage teaches a status table, alleging that the counter described at column 4, lines 35-40 is a received counter and that the repetition period described at column 4, lines 24-35 is a repetition required flag. However, neither the cited text nor any other portion of Kage, teaches or suggests a status table, as now more clearly recited in the claims.

As described in column 4, lines 35-40, Kage merely discloses a counter 35, which is used in a system for use in radio transmission, and discloses where a signal is synchronized with the clock pulse having a repetition period T1. Kage is wholly unrelated to congestion control of Enomoto, and Applicants do not agree that one skilled in the art would be motivated to take combine the clock and repetition period disclosed in Kage with the routing table of Enomoto to obtain the present invention. Further, the present invention cannot be obtained by combining a routing table, a clock

and a repetition period, which are not the same as the status table, the clocks, or the repetition required flag, respectively, of the present invention.

Nonetheless, Applicants submit that the Kage does not teach or suggest the claimed features. For example, the clock of Kage is not the same as either the first counter that indicates that data has been received, the second counter that indicates that no data has been received, or the third counter that indicates that data repetition is required, where the third counter is assigned a value when the repetition required flag is set to indicate that data repetition is required, as claimed. By way of further example, the repetition period T1 of Kage is not the same as the repetition required flag that indicates that there is no data reception during a preset time period and that data repetition is required, as claimed. Accordingly, the present invention is quite different from Kage.

Another feature of the present invention, as recited in claim 1, and as similarly recited in claims 7 and 10, includes where the timer starts at the start of reception of the information by each of said transmission terminals, and the first transmission terminal: (a) increments the first counter when the first transmission terminal receives the information from the first transmission line; (b) determines whether the information is being transmitted from the second transmission line when no information is received by the first transmission terminal; (c) checks the repetition required flag and the third counter to determine whether data repetition is required when the information is being transmitted from the second transmission line; (d) relays the information to the first transmission line and sends the information to the device control block when the repetition required flag and the third counter indicate that data

repetition is required; (e) discards the information when data repetition is not required; and (f) determines whether the timer has reached a preset time, where when the first transmission terminal determines that the timer has not reached the preset time, the first transmission terminal repeats (a)-(f). Kage does not disclose this feature.

For example, Kage does not disclose where the first transmission terminal checks the repetition required flag and the third counter to determine whether data repetition is required when the information is being transmitted from the second transmission line. Accordingly, the present invention is different from Kage.

By way of further example, Kage does not disclose a timer, and where the first transmission terminal determines whether the timer has reached a preset time, where when the first transmission terminal determines that the timer has not reached the preset time, the first transmission terminal repeats (a)-(f). Accordingly, the present invention is different from Kage.

Yet another feature of the present invention, as recited in claim 1, and as similarly recited in claims 7 and 10, includes where when the first transmission terminal determines that the timer has not reached the preset time, the first transmission terminal repeats (a)-(f), and when the first transmission terminal determines that the timer has reached the preset time, the first transmission terminal: increments the second counter and resets the first counter; sets the repetition required flag to indicate that there is no data reception during the preset time period and that data repetition is required; decrements the third counter; and resets the timer. Kage does not disclose this feature.

As previously discussed, Kage does not disclose a timer. It follows that Kage does not disclose where the first transmission terminal determines whether a timer has reached a preset time, and executes a series of steps upon the determination of whether the timer has reached the preset time. Accordingly, the present invention distinguishes over Kage.

Therefore, Kage fails to teach or suggest "wherein the status table comprises: a first counter that indicates that data has been received; a second counter that indicates that no data has been received; a repetition required flag that indicates that there is no data reception during a preset time period and that data repetition is required; and a third counter that indicates that data repetition is required, where the third counter is assigned a value when the repetition required flag is set to indicate that data repetition is required" as recited in claim 1, and as similarly recited in claims 7 and 10.

Furthermore, Kage fails to teach or suggest "wherein the timer starts at the start of reception of the information by each of said transmission terminals" and "wherein the first transmission terminal: (a) increments the first counter when the first transmission terminal receives the information from the first transmission line; (b) determines whether the information is being transmitted from the second transmission line when no information is received by the first transmission terminal; (c) checks the repetition required flag and the third counter to determine whether data repetition is required when the information is being transmitted from the second transmission line; (d) relays the information to the first transmission line and sends the information to the device control block when the repetition required flag and the third counter indicate that data repetition is required; (e) discards the information when data

repetition is not required; and (f) determines whether the timer has reached a preset time" as recited in claim 1, and as similarly recited in claims 7 and 10.

Further, Kage fails to teach or suggest "wherein when the first transmission terminal determines that the timer has not reached the preset time, the first transmission terminal repeats (a)-(f), and wherein when the first transmission terminal determines that the timer has reached the preset time, the first transmission terminal: increments the second counter and resets the first counter; sets the repetition required flag to indicate that there is no data reception during the preset time period and that data repetition is required; decrements the third counter; and resets the timer" as recited in claim 1, and as similarly recited in claims 7 and 10.

Claims 11 stands rejected under 35 U.S.C. §103(a) as being unpatentable over Enomoto in view of Yee, further in view of U.S. Patent No. 4,301,539 to Kage. As previously indicated, claim 11 was canceled. Therefore, this rejection regarding claim 11 is rendered moot.

New Claim 12

Claim 12 was added to more clearly describe features of the present invention. Claim 12 includes the features which were discussed above with regard to independent claims 1, 7 and 10. Therefore, claim 12 is allowable for at least the same reasons previously discussed regarding claims 1, 7 and 10.

In view of the foregoing amendments and remarks, Applicants submit that pending claims 1, 2, 5-7, 9, 10 and 12 are in condition for allowance.

Accordingly, early allowance of claims 1, 2, 5-7, 9, 10 and 12 is respectfully requested.

To the extent necessary, the applicants petition for an extension of time under 37 CFR 1.136. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, or credit any overpayment of fees, to the deposit account of MATTINGLY, STANGER, MALUR & BRUNDIDGE, P.C., Deposit Account No. 50-1417 (referencing Attorney Docket No. 520.43271X00).

Respectfully submitted,

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